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Career characteristics and postgraduate education of female dentist graduates of the College of Dentistry at King Saud University, Saudi Arabia

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KEYWORDS

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Abstract *Objectives:* The aims of this study were to investigate the number of female bachelor of dental surgery graduates who earned postgraduate education degrees from King Saud University, their specialties, degrees of qualification, and countries of graduation.

Methods: A questionnaire survey was conducted through face-to-face or phone interview among 677 female dentists who graduated from the College of Dentistry at King Saud University between 1984 and 2006.

Results: Five hundred forty-five (81%) graduate female dentists responded, of whom 54% had completed postgraduate dental education. In the Saudi Board, 17% had obtained degrees in

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advanced restorative dentistry, 15% in pediatric dentistry, 14% in advanced general dentistry, 11% in orthodontics, 10% in prosthodontics, 8% in operative dentistry, 5% in endodontics, 5% in periodontics, 3% in oral and maxillofacial surgery, and 11% in other specialties. Fifty-nine percent had master's degrees, 7% had doctorates, 32% had board certificates, and 2% had fellowship certificates.

Conclusion: More than half (54%) the female dentists surveyed had pursued postgraduate education. This investigation highlighted the different specialties enrolled by female dentists. Orthodontic post graduate program displayed the highest percentage of interest. Understanding the unavoidable social family needs and the demand for higher education by female dentists provides ideas as more programs should be planned to accommodate the needs of Saudi female dentists. This type of study should be repeated due to the increasing interest of female dentists in higher education.

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1. Introduction

Continuing professional development has become the goal in almost every profession, and the dental profession is no exception. It is a common desire of the public and the dental community to ensure the continuing growth of professional competency among dental practitioners (Chan et al., 2006). The number and proportion of females entering dental school have increased during the past two decades (Neumann and Nix, 2002).

Newton et al. (2000) investigated whether differences existed between male and female dental practitioners in the types of positions they occupy. Their findings show that most females are employed in general dental practice. Another study by Chan et al. (2006) reported that 95.8% of the 386 general dental practitioners who attended the 26th Asia Pacific Dental Congress declared that they would take continuing professional dental education programs and courses within the next 5 years.

Ashri et al. (2007) investigated the interests of Saudi dental practitioners in postgraduate dental education, reporting that 90% of the respondents were interested in obtaining higher dental education. Self-development was the most common reason selected by respondents to continue their higher dental education. On the other hand, the main reason for not having an interest in continuing higher dental education was family-related, which was more significant in female respondents (10%). When unmarried females were compared to married females, 96.7% of the unmarried females showed interest in continuing their higher dental education as compared to 81% of married female respondents (Ashri et al., 2007).

In Saudi Arabia, dentistry is one of the health professions now attracting a large number of students of both sexes. As the population of Saudi Arabia increases, the demand for dental treatment for this population will increase also. Specialization in dentistry is needed to provide high quality dental care for the population of Saudi Arabia. Numerous Saudi female dentists are already in practice, and the number graduating from the College of Dentistry at King Saud University (CD-KSU) in Riyadh is increasing steadily (Shalhoub and Badr, 1987).

CD-KSU was the first university-based dental training institute on the Arabian Gulf, training dentists who are now providing dental care throughout Saudi Arabia. Of the 1917 graduates from the College of Dentistry up to 2010, almost half (887) are females. In addition—and more importantly—

many of those graduates are now serving as faculty members in various colleges of dentistry throughout Saudi Arabia as well as leading dental care providers in both private and government, civil and military, institutions (Aldrees et al., 2008).

King Saud University postgraduate education in dentistry started in 1990, with the first group graduating from the Prosthodontics Master's Degree Program in June 1993. Up to 2009, the total number of postgraduate students who had received their master's in specialty degree programs from KSU was 136, of which 82% were females (Aldrees et al., 2010). After searching the published data, we found nothing available on postgraduate dental education received by female dentist graduates of CD-KSU. On the other hand, a recent study conducted by Al-Dlaigan et al. (2011), investigated the number of male dentists who obtained postgraduate degrees from King Saud University. Therefore, this study investigated the career situation and postgraduate education (PGE) of female dentists who had graduated from CD-KSU.

The objectives of the study were to identify

- The number of female dentistry graduates who earned postgraduate education.
- The specialty earned by graduate female students.
- The degree and/or type of specialty qualification earned by female graduate students.
- The countries and universities from which the female graduates obtained their PGE.

2. Materials and methods

The study was conducted on female dentists who graduated from CD-KSU, using the same methods described previously (Al-Dlaigan et al., 2011). All 677 female dental graduates from the first graduates in 1984 to those graduating in 2006 were included out of the total 887 female graduates from CD-KSU. We excluded those who had graduated after 2006 to allow for a minimum of 4 years in which to obtain their PGE. The names and the years of the graduation were taken from the college's published records (Al-Dlaigan et al., 2007).

The questionnaire was designed in the form of closed questions, as a "tick box" that included 15 multiple choice questions. It consisted of sections covering the following:

- Demographic data (name, telephone number, e-mail address, and year of graduation)

- Dental PGE studies (having PGE or not)
- Current practice status (place of work, title of current position or current administrative position)
- Postgraduate qualifications (type of specialty, degree[s] obtained)

Regarding open questions, such as administrative position and other comments, respondents were asked to get specific information. Prior to undertaking the study, a pilot study for this questionnaire was carried out in CD-KSU on 20 female graduates. The questionnaire was subsequently revised with slight modifications of the questions and format. The questionnaire survey was conducted among the selected sample of graduates through face-to-face interviews with KSU female dental graduates at their practice locations throughout the country. After obtaining the phone numbers from the Saudi Dental Society, we conducted telephone interviews to increase the response rate and to reach those dentists who could not be interviewed in person.

All data were entered into a computer. All descriptive statistical tables and figures were generated to analyze the data using SPSS (version 16 program SPSS Inc., Chicago, Illinois, USA). Answers to open questions were analyzed manually.

3. Results

From a total of 677 females who graduated between 1984 and 2006, 545 (81%) responded. More than half (292; 54%) of the respondents indicated that they had received postgraduate education. Of all respondents, 253 (46%) did not yet have a PGE degree. Fifty-nine (11%) were involved in PGE at the time of this investigation, 134 (24%) were not interested in PGE, and 60 (11%) were planning to pursue PGE in future. The number of graduates undertaking PGE (59; 11%) was added to the number of those who graduated (292; 54%) to reach a total of 351 subjects (65%).

When the current residents were asked about the type of specialty they were enrolled in, it was found that 20% were enrolled in an orthodontics postgraduate program, followed by endodontics (19%), operative dentistry (15%), prosthodontics (14%), pediatric dentistry (10%), periodontics (7%), and the Saudi Board in Advanced Restorative Dentistry Program (SBARD; 5%). Other specialties included advanced general

dentistry (3%) the 3 specialties of oral medicine and oral diagnosis, implant dentistry, and radiology (8%) (Table 1). The preferred countries for continuing PGE were, in descending order, the Kingdom of Saudi Arabia (KSA), USA, UK, and Canada.

Of those who already had PGE, 49 (17%) specialized in SBARD, 45 (15%) in pediatric dentistry, 41 (14%) in advanced general dentistry, 31 (11%) in orthodontics, 30 (10%) in prosthodontics, 23 (8%) in operative dentistry, 16 (5%) in endodontics, 15 (5%) in periodontics, 9 (3%) in oral and maxillofacial surgery, and 33 (11%) specialized in such other fields as oral medicine and oral diagnosis and temporomandibular joint therapy (Table 2). Twenty-nine (10%) had qualifications in more than 1 field.

The degree of qualification was also investigated. We found that 168 (58%) of the sample who completed PGE had master's degrees (Table 2). As to type, 155 (92.2%) had Master of Science (MSc), 6 (3.6%) had master of dental surgery, 5 (3%) had master of public health, 1 (0.6%) had Master of Science in education, and 1 (0.6%) had master of health service administration. Most of them had obtained their master's degrees from KSA (54.8%), followed by the USA (24.4%) and UK (14.2%) (Table 3).

Regarding other degrees, 21 (7%) had a doctorate degree, 19 (90%) had a doctor of philosophy (PhD), 1 (5%) had a doctor of medical science, and 1 (5%) had a doctor of public health. Most of them had obtained their doctorate degree from the USA (52%) and UK (43%) (Table 4).

Of the 292 respondents, 93 (32%) had board certificates, having obtained them from the following countries: 79 (86%) from the KSA, 13 (13%) from the USA and 1 (1%) from the UK (Table 4). More details on the different types of board-certified specialties are revealed in Table 5.

For fellowship certification, it was found that 6 (2%) had fellowship certificates, obtained from the following countries: 3 (50%) from the USA, 1 (10%) from the UK, and 2 (40%) did not clearly indicate the names of the countries on the form provided (Table 4).

As for place of work, title of current position in the academic or clinical field, and current administrative position, about (77%) of the respondents are working in government clinics, 14% in university clinics, 5% in private clinics, and 4% in other places.

The results indicated that 12% of the graduates held academic rank; 8% of them were professors, 15% associate professors, 37% assistant professors, 5% lecturers, and 35% demonstrators. On the other hand, those who held clinical ranks were mostly general practitioners (194; 37%), specialists (183; 35%), consultants (86; 17%), and residents in training programs (59; 11%). Only 12 (2%) of the respondents were in administrative positions at the time of the study.

4. Discussion

The response rate (81%) was quite high because some of the female graduates were faculty members in CD-KSU, and they assisted in obtaining the information about their classmates (such as private phone numbers) so that as many of the 677 female graduates from the years 1984 to 2006 could be covered. However, there were a number of limitations because this type of study required extensive information about graduate students going back 26 years when the first batch graduated from

Table 1 Female residents enrolled in different specialties at CD-KSU (2010).

Specialty	No.	Percentage (%)
Orthodontics	12	20
Endodontics	11	19
Operative dentistry	9	15
Prosthodontics	8	14
Pediatric dentistry	6	10
Periodontics	4	7
Saudi board in advanced restorative dentistry	3	5
Advanced general dentistry	2	3
Other ^a	4	7

^a Oral Medicine & Oral Diagnosis, Temporomandibular Therapy, Oral & Maxillofacial Radiology, Conservative Dentistry, Aesthetic Dentistry, Oral Pathology, Public Health.

Table 2 Number and percentage of women graduates by specialty and qualification (degree).

Graduate by specialty	Graduates (N)	Percentage (%)
Saudi board in advance restorative dentistry	49	17
Pediatric dentistry	45	15
Advance general dentistry	41	14
Orthodontic	31	11
Prosthodontics	30	10
Operative dentistry	23	8
Endodontic	16	6
Periodontics	15	5
M-F surgery	9	3
Other	33	11
Total	292	100
Graduate by qualification (degree)		
Master's degree	168	59
Board certificate	93	32
Doctorate degree	21	7
Fellowship certification	6	2
Total	288	100

Table 3 Countries where master's degree was obtained.

Country	Graduates (N)	Percentage (%)
KSA	92	54.8
USA	41	24.4
UK	24	14.2
Canada	2	1.2
Holland	2	1.2
Germany	1	0.6
Egypt	1	0.6
Australia	1	0.6
Ireland	1	0.6
Unknown	3	1.8
Total	168	100

the CD-KSU. Even after surmounting the difficulties in obtaining the contact numbers, sometimes there were either no answers or the enthusiasm to give complete information was lacking. In addition to the help provided by classmates of the target subjects to increase the response rate, assistance was obtained from the Saudi Commission for Health Specialties and the Saudi Dental Society (in providing their membership list). Twenty-two graduating classes were thus covered with a fair and reasonable representation.

The proportion (54%) of the sample that obtained PGE leading to either a clinical specialty or an academic degree, such as the master's and doctorate degrees, was not very high. Possibly family reasons, commitments, and responsibilities overcame any motivation they might have had to seek PGE. This agrees with the Ashri et al. (2007) study, although when we added the percentage of those who were currently enrolled in PGE (11%) to the percentage who had finished PGE (54%), we found that approximately two thirds of KSU female dental graduates were sufficiently motivated to continue their studies as a part of lifetime learning.

Regarding the different specialties of interest to the current female residents, most favored orthodontics (20%), followed by endodontics (19%). These findings are similar to those of Drugan et al. (2004), who investigated the current working patterns and career aspirations of specialist trainees in dentistry. We found that the SBARD and pediatric dentistry were the most preferred specialties among the participants. These findings are in agreement with those of Ashri et al. (2007), who investigated the interests of Saudi general dental practitioners in specialization. They found that female Saudi general practitioners were interested mostly in operative dentistry, public health, and pediatric dentistry.

The high percentage of pediatric dentistry graduates among the participants suggests that it is a more attractive specialty for Saudi female dentists. This should help provide Saudi Arabia with an adequate supply of pediatric dentists to deal with children's dental needs.

It was interesting to find that 168 of the respondents have master's degrees, with some (29; 19%) having more than one. It seems from the results that the MSc was the most common advanced degree obtained by the graduates. The results of this study are similar to the findings of Leggate and Russell (2002) which also showed that the MSc was the most common type of master's degree for Scottish dentists (Drugan et al., 2004).

With respect to the countries of study, the majority of Master's degree holders obtained their degrees from the KSA, USA, and UK, in that order. The College of Dentistry and postgraduate program administrators at KSU understand the social family needs and the demand for female students and therefore accepted more females (82%) into their programs than males (Aldrees et al., 2010). This finding agrees with the report of Lockhart et al. (1997) who found that many general practitioners chose to study at local universities because of expenses and family needs. Recently, however, it seems that the KSA government has encouraged and supported dental applicants by providing scholarships for students to study abroad, especially in the USA, UK, and Canada. Factors that encourage graduates to study abroad include the similarity of the CD-KSA curriculum to those in American, British, and Canadian dental schools. English as the language of instruction in the KSU and the desire of Saudi dental students to go to those countries for postgraduate education are other factors. Australia and New Zealand dental schools are other places open to students to consider for PGE as well as for doctorate degree studies.

Interestingly, the results also showed that our graduates obtained advanced degrees from 30 universities in 10 countries, indicating that CD-KSU graduates have varied educational experiences.

Twenty-one graduates obtained their doctoral degree in addition to the master's degree or specialty. The former is more likely to be preferred by those who expect to enter academic life environment. Some graduates, in fact, were working in nonacademic institutions. The PhD was the graduates' degree of choice (90%).

Our results showed that the SBARD is the most popular certification board program for women dental graduates (32%). Table 5 shows more details for female graduate students who got their board certificates. The results also showed that the graduates were board certified from countries other

Table 4 Countries where board, fellowship, and doctorate certification were obtained.

Country	Board degree		Fellowship program		Doctorate degree	
	Graduates (N)	%	Graduates (N)	%	Graduates (N)	%
KSA	79	86	—	—	—	—
USA	13	13	3	50	11	52
UK	1	1	1	10	9	43
Holland	—	—	—	—	1	5
Unknown	—	—	2	40	—	—
Total	93	100	6	100	21	100

Table 5 Dental board specialties of graduates.

Board certificate	Graduates (N)	Percentage
Saudi board in advanced restorative dentistry	53	57
Orthodontics	13	14
Pediatric dentistry	9	9.7
Endodontics	5	5.4
M–F surgery	4	4.3
Periodontics	2	2.2
Prosthodontics	2	2.2
Public health	2	2.2
Pathology	1	1
Temporomandibular therapy degree	1	1
Esthetic	1	1
Total	93	100

than Saudi Arabia. Only a few (2%) have fellowship certificates, indicating that this credential was the least attractive postgraduate qualification as far as the graduates were concerned.

With respect to work location, more than three fourths of the graduates were working in government institutions. This could be due to the fact that working in government is more secure in terms of income and also suitable for their time commitment.

For those working in academe, 60% had reached high academic rank as assistant professor as well as other academic rank. Interestingly, the result also showed that the new generation of Dental College graduates was interested in working in the academic field as demonstrators (35%) in the hope of becoming future dental education faculty.

In regard to the clinical title of those working as clinicians, it was found that 194 (37%) were Tgeneral practitioners. This is not surprising in view of the fact that 24% of the graduates were not interested in seeking PGE. This result supports Newton et al. (2000), who studied career improvement in practitioners and found that most female dentists were employed in general dental practice.

5. Conclusion

This study provided an insight into the career characteristics and postgraduate education interest of female dentists who graduated from CD-KSU. It demonstrated that more than half of the respondents had received postgraduate education.

The investigation highlighted the different specialties enrolled by female dentists. Orthodontic post graduate program displayed the highest percentage of interest. Understanding the unavoidable social family needs and the demand for higher education by female dentists provides ideas as more programs should be planned to accommodate the needs of Saudi female dentists. This type of study should be repeated due to the increasing interest of female dentists in higher education.

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